

A. B. McKean,

Wood Pavement.

No. 102846.

Patented May 10, 1870.

Fig. 1.

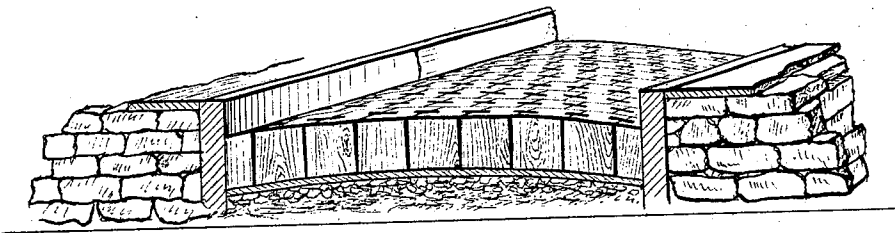


Fig. 2.

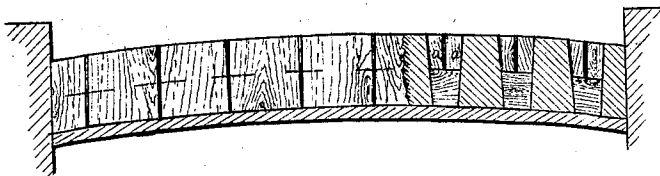


Fig. 4.

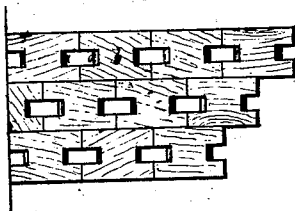


Fig. 5.

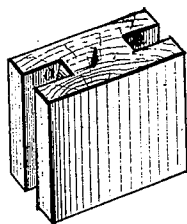
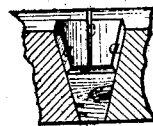


Fig. 3.



Witness.

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ABRAM B. McKEON, OF RUTHERFORD PARK, NEW JERSEY.

Letters Patent No. 102,846, dated May 10, 1870.

IMPROVEMENT IN PAVEMENTS.

The Schedule referred to in these Letters Patent and making part of the same

I, ABRAM B. McKEON, of Rutherford Park, county of Bergen, State of New Jersey, have invented a new and useful Improvement in Pavements, of which the following is a specification.

Nature and Object.

This invention relates to that class of pavements or roadways that are formed of blocks of wood set on end, or with the grain of the wood placed in a vertical position, and the object of the invention is to form a very strong arch of said blocks when their sides are parallel, or nearly so, between the curbing of the streets or roadways, by the use of a key between said blocks, said key being composed partly of wood and partly of sand and gravel, or any other silicious compound that will resist great abrasion, and in wearing will increase or cause as much friction as possible.

Drawings.

Figure 1 is a view in perspective of said invention as it appears when laid in the streets or avenues.

Figure 2 is a view of an arch, partly in elevation and partly in section, the portion in section being made through the blocks at one side of the keys, to show their position between the blocks.

Figure 3 shows in an enlarged view the wooden portion of the key between the two blocks, their section being made at the side of the key.

Figure 4 is a top view or plan of a portion of said pavement with the keys left out, but the spaces shown for them.

Figure 5 represents in perspective one of the blocks made ready for being laid in said pavement.

Like letters refer to like parts in all the figures.

The material for forming this pavement consists chiefly of blocks of wood cut from sticks or scantlings, whose dimensions may be about one-third greater on two of their opposite faces than the other, thereby forming a parallelogram of the section.

Said blocks are then passed through a machine which forms grooves in their opposite edges, as shown at *a a*, figs. 3, 4, and 5, said grooves being deeper at the upper end of each block, or that end which is to be placed uppermost when laid in the pavement, than the lower end, consequently, when the edges of the two blocks are placed together, as represented at *a a*, fig. 3, a V-shaped recess will be formed by the grooves in the two blocks. This V-shaped recess is also seen in the portion in section at *a a*, fig. 2.

It will be found preferable to make the grooves at the top of the blocks of a depth equal to one-fourth of the width of the block, so that, when the edges of two blocks are placed together, the space formed by grooves will equal the solid portion between the two grooves in the same block, as best indicated at fig. 4

where the length of the spaces *a a* is equal to the space at *b* between *a a* in the same block.

The inclination of these grooves toward the bottom of the blocks may be very slight, so that the bottom of said grooves will give but little more than an obtuse angle with the top of the block, but it should always be sufficiently great to more than equal one-half the extreme limit of contraction and expansion in each block; otherwise anything introduced between the blocks in said grooves, as a key, would fail to perform its functions.

After the blocks are thus formed, they are then in the best condition to be treated by any process for preserving the wood, as all useless portions are removed and the parts to be most exposed to the elements of decay can be best presented to the preserving materials.

The foundation for the pavement is prepared in any suitable manner, and may be of rubble-work or concrete, or timber, as desired, but the upper surface should be curved upward from each curb or side, so that the water will readily run to the gutters from the center, and said curve should be, when the work is perfectly done, an arc of some definite circle, so that the arch formed by said blocks will be a regular curve; otherwise the wooden keys between the blocks would fail to fit perfectly in the grooves, or cause great expense in the process of construction.

Upon the foundation so prepared, the said blocks are set edge to edge from curb to curb, forming an arch, as shown at figs. 1 and 2, and into the spaces formed with the grooves between the several blocks, keys of wood are inserted, said keys being cut from strips or laths whose thickness is nearly or quite equal to the width of the tool that formed the groove, and in width equal to about one-half the length of the blocks, and with their ends at an angle corresponding to that formed by the bottom of the groove with the bottom or top of the block.

The grain of the wood in these wooden keys runs parallel to the foundation of the pavement, or is at a right angle to the edges of the blocks, consequently the keys press endwise into the grooves and against the grain of the wood in the blocks sidewise. Consequently the changes caused by the expansion and contraction of the woody fiber will be vertical in the keys, and horizontal in the blocks.

By this construction it is evident that whatever expansion may take place by the swelling of the wooden blocks, it will be compensated for to the extent of the space occupied by the keys, and it is also equally evident that, as the keys expand, they will reach down to a certain degree upon the foundation, even when the blocks may have a tendency to rise and buckle the arch. Since the opposite edges of each block are par-

allel to each other it is manifest that when they are laid in the arches, spaces will be forced between them at their upper ends, as shown in the drawings at figs. 1 and 2, and were no keys used of any kind whatever, the blocks would not form a very fixed and compact mass, but "wabble" about with the varying changes of the travel.

The wooden keys to a great extent prevent such a movement, but to complete their efficiency I fill the rest of the space, as at C, fig. 3, formed by the grooves between the blocks and above the upper edge of the keys, with some kind of silicious concrete whose gritty nature serves to hold the keys down firmly in the grooves, while it assists greatly in providing the requisite degree of friction to prevent the slipping of the animals in traveling over it, while it provides also an element of great resistance to the wear of the pavement.

By alternating these spaces in the several arches, as indicated in figs. 1 and 4, it will be observed that as the travel moves across the arches, it must come in constant contact with the concrete, thereby constantly packing it down more firmly on the wooden keys which bind the blocks in their proper position between the curbings or sidewalks.

Claim.

A wood pavement composed of blocks having inclined grooves *a a*, arranged as represented, and receiving wooden keys and filling upon them, as set forth.

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Witnesses:

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BOYD ELIOT.